REMARKS

Claims 1-21 and 23 are pending in the present application, with claims 1-6, 20-21 and 23 standing ready for further action on the merits, and remaining claims 7-19 being withdrawn from consideration. Claim 21 is amended to further clarify the present invention by overcoming the objection under 37 C.F.R. § 1.75(c). New claim 23 is added based on the disclosure at page 11, lines 10-21 of the specification. Thus, no new matter is introduced herein.

In view of the following remarks, Applicants respectfully request reconsideration and withdrawal of the rejections.

Claim Objections

Claim 21 is objected to under 37 C.F.R. § 1.75(c), as being of improper dependent form for ailing to further limit the subject matter of a previous claim. The objection is respectfully traversed.

Claim 21 is amended to further clarify the present invention. Upon entry of the amendments to the claims, the objection has been overcome. Withdrawal of the objection is requested.

Claim Rejections under 35 U.S.C. § 103

Claims 1-5 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clarke et al. US '470 (US 2002/0142470).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Clarke et al. US '470 in view of Sundberg et al. US '825 (US 6,086,825).

These rejections are respectfully traversed.

Distinctions and Nonobviousness over the Cited References

As recited in currently amended claim 1, the claimed invention is directed to a microfluidic arrangement which comprises:

A) one or more microfluidic devices, each of which comprises a set (set I) of one or more essentially equal microchannel structures that are comprised within a common generally planar layer of the device (layer I),

each of said microchannel structures comprises an internal microconduit portion in which an active liquid flow is used; and

B) an instrument, which is intended for processing said one or more microfluidic devices and comprises a spinner motor and a rotary member,

wherein

I) said rotary member comprises not less than 10 and not more than 1000 of seats for holding at least one of said one or more microfluidic devices, each of said seats

i) is capable of being positioned at the same radial distance as any of the other seats of the group, and

ii) aligns layer I essentially radially at an angle α relative to the spin plane where $45° \leq \alpha \leq 90°$;

II) said internal microconduit portion has an upstream part that can be positioned at a shorter radial distance than a downstream part when the corresponding microfluidic device is placed in any of said one or more seats. (Emphasis added.)

In short, the claimed invention relates to a microfluidic arrangement comprising a rotary member with seats formed on its circumference, and a plurality of microfluidic devices

comprising microchannel structures arranged in a planar layer thereon, wherein the microfluidic devices may be held in said seats at an angle differing from zero relative to the spin plane of the rotary member. Furthermore, the number of seats on the rotary member is between 10 and 1000.

Due to the claimed feature that the microfluidic devices are held at an angle relative to the spin plane of the rotary member, the distance between the seats may be smaller than the length of the microfluidic devices. Thus, a larger number of such microfluidic devices can be arranged around the circumference of the rotary member, than when the microfluidic devices are placed horizontally on the rotary member. Hence, a larger number of microchannel structures can be processed by the claimed microfluidic arrangement than a microfluidic arrangement having the same size of the prior art.

Clarke et al. US '470 discloses a device intended for testing blood samples and their contents of white blood cells through a gravimetric method in space. The device of Clarke et al. US '470 has a spinning disc onto which microscopic slides with blood samples are placed. The disc further has balls which are rotatable relative to the spinning disc, where the slides are placed on the balls, so that the slides may be oriented at different angles relative to the spin plane.

It is alleged in the Office Action that one skilled in the art could easily change the setup of the device shown in Clarke et al. US '470 to include more than four balls, and hence more than four slides.

However, Applicants respectfully disagree the Examiner's position. The technical effect that it is possible to process a larger number of microfluidic devices cannot be achieved with the balls as disclosed in Clarke et al. US '470. Even if a slide is rotated so that it gains the same orientation as the orientation stipulated by the present invention, no space is saved since the balls still occupy the same area on the rotary member.

The inclusion of more than four balls in Clarke et al. US '470 cannot be achieved without increasing the size of the device. On the other hand, according to the claimed invention, with a simple structure, a larger number of seats can be effectively increased within the same area as previously occupied by horizontal microfluidic devices, and thus a larger number of microfluidic devices, for example up to 100 or even up to 1000 as recited in the claim, can be placed on the rotary member without changing its size.

Further, as recited in new claims 23, each microfluidic device comprises more than five microchannel structures (see *e.g.*, page 11, lines 10-21 of the specification).

The device as disclosed in Clarke et al. US '470 in turn, is designed to run samples of blood on slides having but one single structure each, and which structure is larger in its dimensions than the microchannel structures of the present invention. Therefore, it is not possible to simply add more channels on each slide. A one skilled in the art, departing from Clarke et al. US '470, would therefore not be able to reach the claimed arrangement, which is capable of parallel processing of a large number of samples in at least 50 separate microchannel structures per run.

As explained above, Clarke et al. US '470 fails to disclose or suggest the claims features. Further, the secondly reference, Sundberg et al. US '825 is provided to teach aspects of the dependent claims and fails to remedy Clarke et al. US '470's deficiencies. Therefore, there is not provided any rationale and/or reasonable expectation of success based on the combination of the cited references, by which one skilled in the art could arrive at the claimed invention, since the cited references fail to disclose or suggest each of the instantly claimed features, as explained above. Thus, it is submitted that the claimed invention is not obvious over Clarke et al. US '470 in view of Sundberg et al. US '825.

Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

CONCLUSION

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims is allowed.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Toyohiko Konno, Reg. No. L0053 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: SEP 23 2010

Respectfully submitted,

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